INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP03/14300

A. CLASSIFICATION OF SUBJECT MATTER Int.Cl ⁷ B22D11/06, B22D11/10				
Int.	CT BSSDII/00' BSSDII/10		1	
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According to	International Patent Classification (IPC) or to both nat	ional classification and IPC		
<u> </u>	SEARCHED			
Mi-i	companies searched (classification system followed b	y classification symbols)		
Int.	C1 ⁷ B22D11/06, B22D11/10, B22D	45/00, B22D47/00, B25J	15/04	
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	ion searched other than minimum documentation to the	extent that such documents are included	in the fields searched	
Documentat Tits	ayo Shinan Koho 1922–1996	Toroku Jitsuyo Shinan Koh	0 1994-2003	
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	ata base consulted during the international search (name	of data base and where practicable, sea	rch terms used)	
Electronic d	ata base consulted during the international seatch (hame	of data base and, where practically con-	1	
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	TOTAL CONCENTRATION TO BE DELEVANT			
C. DOCU	MENTS CONSIDERED TO BE RELEVANT			
Category*	Citation of document, with indication, where app	propriate, of the relevant passages	Relevant to claim No.	
A	JP 6-339753 A (Ishikawajima-	Harima Heavy	1-10	
<u> </u>	Industries Co., Ltd.),			
	13 December, 1994 (13.12.94),			
	Figs. 1, 3, 5, 7; Par. Nos. [0013] to [0038]		
	& US 5277243 A (Ishikawajima	-Harima Heavy		
	Industries Co., Ltd.), 11 January, 1994 (11.01.94),	•] •	
	Figs. 1, 3, 5, 7; Par. Nos. [00031 to [0008]		
	& US 5184668 A (Ishikawajima	-Harima Heavy	·	
	Industries Co., Ltd.),			
	09 February, 1993 (09.02.93),		•	
	Figs. 1, 3, 5, 7; Par. Nos. [0003] to [0008]		
	& EP 0450775 A2 (Ishikawajim	a-Harima Heavy	•	
•	Industries Co., Ltd.),	•		
	09 October, 1991 (09.10.91), Figs. 1, 3, 5, 7; Par. Nos. [00031 to [0009]		
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	5 Pag C	See patent family annex.	I	
X Furth	er documents are listed in the continuation of Box C.			
* Special categories of cited documents: "I" later document published after the international filing date or priority date and not in conflict with the application but cited to				
"A" docum	ent defining the general state of the art which is not cred to be of particular relevance	understand the principle or theory un	derlying the invention	
"E" earlier	document but published on or after the international filing	"X" document of particular relevance; the considered novel or cannot be consid	claimed invention cannot be	
date "L" document which may throw doubts on priority claim(s) or which is		step when the document is taken alor	ne e	
cited to establish the publication date of another citation or other		"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is		
special "O" docum	reason (as specified) ent referring to an oral disclosure, use, exhibition or other	combined with one or more other suc	h documents, such	
means combination detrig obvious to a person skilled in the art			on skilled in the art t family	
"P" docum than th	ent published prior to the international filing date but later te priority date claimed	·		
Date of the actual completion of the international search Date of mailing of the international search		rch report		
04 F	ebruary, 2004 (04.02.04)	17 February, 2004	(11.UZ.U4)	
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Name and n	nailing address of the ISA/	Authorized officer		
Japa	nese Patent Office			
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tegory*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No	
A	JP 6-339751 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 13 December, 1994 (13.12.94), Figs. 1, 3, 5, 7 to 9; Par. Nos. [0015] to [0044] & US 5259439 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 09 November, 1993 (09.11.93), Figs. 1, 3, 5, 7 to 9; Par. Nos. [0003] to [0008]	1-10	
A	JP 61-176447 A (Ishikawajima-Harima Heavy Industries Co., Ltd.), 08 August, 1986 (08.08.86), Fig. 1; page 2, upper right column, line 18 to page 3, upper left column, line 3 (Family: none)		
A	JP 5-115962 A (Yamaha Motor Co., Ltd.), 14 May, 1993 (14.05.93), Figs. 2, 4; Par. Nos. [0008] to [0024] (Family: none)	1-10	
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